

Attorney's Docket: 2001DE435  
Serial No.: 10/039,480  
Response to Office Action mailed 3/10/2004

### REMARKS

The Office Action mailed March 10, 2004 has been carefully considered together with each of the references cited therein. The amendments and remarks presented herein are believed to be fully responsive to the Office Action. Reconsideration of the present Application in view of the following remarks is respectfully requested.

Applicant has amended the Application to attend to housekeeping matters and to more clearly describe the invention. Claim 1 was amended to recite that the composition is obtained by contacting components a), b), and c), wherein c) is a sulfuric acid, and the molar ratio, d) is now 15:1 to 550:1, added the step of heat treating or compacting to provide the builder composition having 7-12 wt% alpha-sodium disilicate, 0-12 wt-% beta-sodium disilicate, and 65-95 wt-% amorphous fractions and that the builder composition is essentially free from polymers of acrylic acid and maleic acid, cellulose or a surfactant. A new claim 31 was added. Support for the amendments to claim 1 and new claim 31 may be found in Applicant's originally filed claims 1, 2, 7, 8, and 17 and paragraphs [00011], [00012], and [00021] of Applicant's Specification. Claims 5, 6, 11-23, and 25-26, and 28-30 were amended to attend to housekeeping matters according to US patent practice. Support for the amendments to claims 5, 6, 10-16, 18-23, and 25-26, and 28-30 may be found in Applicant's originally filed claims 5, 6, 10-16, 18-23, and 25-26, and 28-30. It is not believed that any new matter was introduced by these amendments, and that no additional search is required by the office. The objections to claims 4-6, 10-16, 18-23, 16-23, 26, and 28-30 for informalities should be removed in light of the above amendments.

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Claims 1, 5-19, 22-24, 26, and 27 were rejected under 35 U.S.C.

§102(b) as being anticipated by Kazuta et al. US 5,919,747 ('747). The rejection of claim 1 as amended under 35 U.S.C. §102(b) as being anticipated by Kazuta et al. US 5,919,747 should be withdrawn for the reason that Kazuta et al. relates to a laundry detergent which comprises layered silicate and sodium polyacrylate and surfactants. In '747, at column 9, line 36 to column 11, line 57, hundreds of detergent builders are named, but nowhere in the '747 reference is it disclosed that the layered silicate is contacted with water and a sulfuric acid component in the molar ratio's disclosed in Applicant's specification. Furthermore, the '747 reference prepares the detergent in a powder or dry form with a required binder being a nonionic surfactant, thus no water can be present. Applicant's claim 1 as amended relates to a detergent builder which is typically a component of a detergent, but not itself a detergent. Applicant's detergent builder is obtained by contacting the layered sodium silicate with water and a sulfuric acid or salt thereof and activated by heat treatment or compacting. Thus, the instant invention differs from the '747 reference by not being a detergent, by employing a wet activation and a heating or compacting step. Furthermore, in Applicant's Table 1, Applicant has demonstrated unexpectedly superior performance in displaying a dramatically reduced dissolution residue compared to conventionally mixed powders materials which are not prepared according to applicant's invention. Furthermore, as amended, claim 1 excludes polymers of acrylic acid and maleic acid, and surfactants in the builder composition. The '747 reference does not disclose all of the elements of Applicant's invention. Therefore the rejection of amended claim 1 under 35 U.S.C. §102(b) as being anticipated by

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Kazuta et al. US 5,919,747 should be withdrawn for the reason that Kazuta et al. does not disclose all of the elements of Applicant's invention. The rejection of claims 5-19 under 35 U.S.C. §102(b) as being anticipated by Kazuta et al. US 5,919,747 should be withdrawn for the reasons given in support of claim 1 from which they depend. The rejection of claims 22-24, 26, and 27 as amended under 35 U.S.C. §102(b) as being anticipated by Kazuta et al. US 5,919,747 should be withdrawn for the reason that these claims depend from amended claim 1 and relate to detergent compositions with the activated builder composition of claim 1 and should be allowable for the reason that Kazuta et al. do not disclose all the elements of the instant invention: that is, the detergents of Kazuta do not contain any activated builder composition which was activated in the presence of water and a sulfuric acid component followed by a heat treating or compacting step. In re Best does not apply in situations where there is evidence of unobvious differences as shown in Table 1 of Applicant's Specification.

Claims 1, 5-19, 22-24, 26, and 27 were rejected under 35 U.S.C. §102(b) as being anticipated by Agar et al. US 5,691,296. Agar et al. discloses a laundry detergent which comprise layered silicate and acrylic/maleic copolymer (Col 3, example 1). In such processes the layered silicates are mixed with the copolymer and coated with non-ionic surfactants. There are no sulfuric acid components. Furthermore Applicant specifically excludes such materials as acrylic/maleic copolymers and surfactants from the detergent builder composition of the instant invention. Thus, Agar et al. does not disclose all of the elements of the instant invention. Therefore, the rejection of claim 1 under 35 U.S.C. §102(b) as being anticipated by Agar et al. US

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5,691,296 should be withdrawn for the reason that Agar et al. does not disclose all of the elements of Applicant's invention. The rejection of claims 5-19 under 35 U.S.C. §102(b) as being anticipated by Kazuta et al.US

5,919,747 should be withdrawn for the reasons given in support of claim 1 from which they depend. The rejection of claims 22-24, 26, and 27 as amended under 35 U.S.C. §102(b) as being anticipated by Agar et al.US

5,691,296 should be withdrawn for the reason that these claims depend from amended claim 1 and relate to detergent compositions with the activated

builder composition of claim 1 and should be allowable for the reason that

Agar et al. do not disclose all the elements of the instant invention: that is, the detergents of Agar do not contain any activated builder composition which was activated in the presence of water and a sulfuric acid component in the absence of a polymer of acrylic/maleic acid or a surfactant, followed by a heat treating or compacting step. It is fundamental that all elements of a claim must be found united in the same way to perform the identical function for a reference to establish anticipation. Anticipation is a technical defense which must meet standards: Unless all of the same elements are found in exactly the same situation and united in the same way to perform the identical function in a single prior art reference, there is no anticipation. In re Best does not apply in situations where there is evidence of unobvious differences as shown in Table 1 of Applicant's Specification.

Claims 1, 5-19, 22-24, 26-29 were rejected under 35 U.S.C. §102(b) as being anticipated by Ramanan et al.US 6,288,016. Ramanan et al. discloses a laundry detergent which comprise layered silicate and acrylic/maleic copolymer (Col 14, example 5). In Ramanan et al. the detergent is prepared

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from a low density detergent granule containing acrylic-maleic polymer, but the layered silicate portion of the granule is not activated by sulfuric acid. Such acrylic-maleic polymers are specifically excluded from the builder of the instant invention. It is fundamental that all elements of a claim must be found united in the same way to perform the identical function for a reference to establish anticipation. Anticipation is a technical defense which must meet standards: Unless all of the same elements are found in exactly the same situation and united in the same way to perform the identical function in a single prior art reference, there is no anticipation. Therefore the rejection of claim 1 as amended under 35 USC §102(b) as being anticipated by Ramanan et al. US 6,288,016 should be withdrawn for the reason that Ramanan et al. does not disclose all of the elements of Applicant's invention. Similarly, the rejection of amended claims 5-19 under 35 USC §102(b) as being anticipated by Ramanan et al. US 6,288,016 should be withdrawn for the reasons given in support of claim 1 from which they depend. The rejection of claims 22-24, 26-29 as amended under 35 U.S.C. §102(b) as being anticipated by Ramanan et al. US 6,288,016 should be withdrawn for the reason that these claims depend from amended claim 1 and relate to detergent compositions with the activated builder composition of claim 1 and should be allowable for the reason that Ramanan et al. do not disclose all the elements of the instant invention: that is, the detergents of Ramanan et al. do not contain any activated builder composition which was activated in the presence of water and a sulfuric acid component in the absence of a polymer of acrylic/maleic acid followed by a heat treating or compacting step.

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Claims 1, 5-19, 22-24, 26-29 were rejected under 35 U.S.C. §102(b) as being anticipated by Wilkinson et al. US 5,698,510. Wilkinson et al. discloses a laundry detergent which comprise layered silicate and acrylic/maleic copolymer (Col 14, example 5). In Wilkinson et al. the detergent is prepared by mixing powdered layered silicate with powdered citric acid and sprayed with a surfactant (ethoxylated tallow alcohol) and roll compacted. Applicant's invention specifically excludes surfactants in the builder activation step as recited in amended claim 1. It is fundamental that all elements of a claim must be found united in the same way to perform the identical function for a reference to establish anticipation. Anticipation is a technical defense which must meet standards: Unless all of the same elements are found in exactly the same situation and united in the same way to perform the identical function in a single prior art reference, there is no anticipation. Therefore the rejection of claim 1 as amended under 35 USC §102(b) as being anticipated by Wilkinson et al. US 5,698,510 should be withdrawn for the reason that Wilkinson et al. does not disclose all of the elements of Applicant's invention. Similarly, the rejection of amended claims 5-19 under 35 USC §102(b) as being anticipated by Wilkinson et al. US 5,698,510 should be withdrawn for the reasons given in support of claim 1 from which they depend. The rejection of claims 22-24, 26-29 as amended under 35 U.S.C. §102(b) as being anticipated by Wilkinson et al. US 5,698,510 should be withdrawn for the reason that these claims depend from amended claim 1 and relate to detergent compositions with the activated builder composition of claim 1 and should be allowable for the reason that Wilkinson et al. do not disclose all the elements of the instant invention; that is, the detergents of Wilkinson do not

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contain any activated builder composition which was activated in the presence of water and a sulfuric acid component in the absence of a surfactant followed by a heat treating or compacting step.

Claims 1, 5-19, 22-24, 26, 27 and 29 were rejected under 35 U.S.C. §102(b) as being anticipated by Bailley et al. US 5,540,855. Bailley et al. discloses a laundry detergent which comprise layered silicate and anhydrous citric acid which were premixed dry to form an intimate mixture of the two powders. The resulting mixture was then roll compacted. In a variation, the intimate powder mixture was sprayed with molten surfactant (TAE50) prior to the compaction. At no time was the layered silicate or the citric acid component contacted with water. Therefore, the rejection of claim 1 as amended under 35 U.S.C. §102(b) as being anticipated by Bailley et al. US 5,540,855. Bailley et al. should be removed for the reason that Bailley et al. fails to disclose all of the elements of the instant invention. It is fundamental that all elements of a claim must be found united in the same way to perform the identical function for a reference to establish anticipation. Anticipation is a technical defense which must meet standards: Unless all of the same elements are found in exactly the same situation and united in the same way to perform the identical function in a single prior art reference, there is no anticipation. The rejection of claims 5-19, 22-24, 26, 27 and 29 as amended under 35 U.S.C. §102(b) as being anticipated by Bailley et al. US 5,540,855 should be withdrawn for the reasons given in support of claim 1 from which they depend.

Claims 1, 5-19, 22-24, 26, 27 and 29 were rejected under 35 U.S.C. §102(b) as being anticipated by Bauer et al. US 6,506,722. Bauer et al. discloses granular detergents comprising SKS-6 and citric acid wherein the

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granules are compacted and ground to a particulate size of between 500 and 1000 microns (See col 11, Examples 18 and 29). The cited examples elate to compressed detergent tablets made up from commercial detergent ingredients wherein SKS-6 and cellulose are cogenerated. There is no layered silicate activation step in the presence of the acid and water, or its subsequent roll compacting. Therefore, the rejection of claims 1, 5-19, 22-24, 26, 27 and 29 as amended under 35 U.S.C. §102(b) as being anticipated by Bauer et al. US 6,506,722 should be withdrawn for the reason that the Bauer reference fails to recite all of the elements of applicant's invention. It is fundamental that all elements of a claim must be found united in the same way to perform the identical function for a reference to establish anticipation. Anticipation is a technical defense which must meet standards: Unless all of the same elements are found in exactly the same situation and united in the same way to perform the identical function in a single prior art reference, there is no anticipation. The rejection of claims 5-19, 22-24, 26, 27 and 29 under 35 U.S.C. §102(b) as being anticipated by Bauer et al. US 6,506,722 should be withdrawn for the reasons given in support of claim 1 from which they depend.

Claims 1, 5-19, 22-24, 26-30 were rejected under 35 U.S.C. §102(b) as being anticipated by Littau et al. US 6,395,694. Littau et al. discloses granular detergents comprising SKS-6 and citric acid wherein the granules are compacted and ground to a particulate size of between 300 and 1800 microns (See col 7, Example 1, and column 4, lines 1-12). Littau et al. disclose the mixing of fatty alkyl ester alkoxylates and pulverent mixtures of detergent constituents throughly followed by compacting. Littau fail to disclose any layered silicate activation step involving the contacting of the layered silicate,



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water and sulfuric acid in the absence of any surfactants. It is fundamental that all elements of a claim must be found united in the same way to perform the identical function for a reference to establish anticipation. Anticipation is a technical defense which must meet standards: Unless all of the same elements are found in exactly the same situation and united in the same way to perform the identical function in a single prior art reference, there is no anticipation. Therefore, the rejection of claims 1, 5-19, 22-24, 26-30 under 35 U.S.C. §102(b) as being anticipated by Littau et al. US 6,395,694 should be withdrawn for the reason that Littau fail to disclose all of the elements of applicant's invention.

Claims 1, 5-19, 22-24, 26-30 were rejected under 35 U.S.C. §103(a) as being unpatentable over Bauer et al. US 6,506,722 in view of Gill et al. US 5,614,160. The rejection of claim 1 as amended under 35 U.S.C. §103(a) as being unpatentable over Bauer et al. US 6,506,722 in view of Gill et al. US 5,614,160 should be withdrawn for the reason that as shown herein above and as pointed out by the examiner, Bauer do not specifically teach a crystalline silicate with sulfuric acid. The Gill et al. reference is relied on to show that such silicate can be prepared with sulfuric acid to obtain a builder with superior properties (Col 2, lines 35-60 and Col 18, Table 14 of Gill et al.). However, the Gill et al. reference relates to a complete hydration (sluried) and transformation of a pure delta or alpha phase of a silicate material with the subsequent rearrangement of the silicate to form a **kanemite** structure which is subsequently filtered, and the resulting solid cake is dried and milled. In the instant invention, the layered silicate is contacted in an excess of acid (molar ratio of layered silicate to releasable H<sup>+</sup> is 15:1 to 550:1) and an amount of

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water (molar ratio of water to releasable  $H^+$  is 3:1 to 1000:1) which is not sufficient to hydrolyze the silicate: thus, in the instant invention, no kanemite structure is formed and the multiphase character of the layered silicate is unchanged. (See Example 6, [0068]). Thus, the "preparation of the silicate with sulfuric acid" disclosed in Gill et al. is not the same as in the instant application, and in fact teaches away from the instant invention, because the **instant invention does not hydrolyze the silicate and no phase change of the polymorphous silicate occurs.** Thus, no one skilled in the art would be motivated to prepare the composition of Bauer et al. using the acid treatment of Gill et al. In addition, the '722 reference requires cellulose, which is excluded from the activation process of claim 1 of the instant application. Further applicant in Table 1 has provided experimental results which demonstrate that builder compositions of the present invention exhibit surprising reductions in dissolution residue compared to conventional builder compositions. Therefore, the rejection of claim 1 as amended under 35 U.S.C. §103(a) as being unpatentable over Bauer et al. US 6,506,722 in view of Gill et al. US 5,614,160 should be withdrawn for the reason that Bauer teach away from the invention by the addition of cellulose and that no one skilled in the art, armed with the disclosure of Gill which requires complete hydrolysis of the layered silicate to alter the structure of the layered silicate would provide no motivation to combine references to obtain applicant's invention. The invention as a whole must be considered in deciding the question of obviousness. It is an error to focus on a "most critical feature". At best the examiner has shown that it would have been obvious to the skilled person in the art to try sulfuric acid activation with an excess of acid in a non-hydrolyzed

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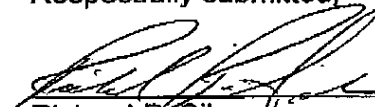
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layered silicate. However, 'obvious-to-try' is not the standard of 35 USC 103. Disregard for the unobviousness of the results of the obvious-to-try experiments disregards the 'invention as a whole' concept of Section 103. The rejection of claims 5-19, 22-24, 26-30 as amended under 35 U.S.C. §103(a) as being unpatentable over Bauer et al. US 6,506,722 in view of Gill et al. US 5,614,160 should be withdrawn for the reasons given in support of claim 1 from which they depend.

It is respectfully submitted that, in view of the above remarks, the objections to the claims, and the rejections under 35 U.S.C. 102(b) and 103(a), should be withdrawn and that this application is in a condition for an allowance of all pending claims. Accordingly, favorable reconsideration and an allowance of all pending claims are courteously solicited.

An early and favorable action is courteously solicited.

Respectfully submitted,



Richard P. Silverman  
Registration No. 36,277  
Agent for Applicants

(CUSTOMER NUMBER 25,255)  
CLARIANT CORPORATION  
INDUSTRIAL PROPERTY DEPARTMENT  
4000 Monroe Road  
Charlotte, NC 28205  
Telephone: (704) 331-7156  
Facsimile: (704) 331-7707

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